TECHNICAL REVIEW DOCUMENT for OPERATING PERMIT 990PWE207 to be issued to:

North American Resources Company Ft. Lupton Plant Weld County Source ID 1230319

> Prepared on March 8, 1999 by Ashley L. Kendall

I. Purpose

This document will establish the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this Site. It is designed for reference during review of the proposed permit by the EPA and during Public Comment. The conclusions made in this report are based on information provided in the original application submittal of February 24, 1999 as well as telephone conversations with the source. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

On April 16, 1998 the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction permits. These procedures are being directly implemented in all operating permits that had not started their Public Comment period as of April 16, 1998. All short term emission and production/throughput limits that appeared in the construction permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling 12 month total. Note that, If applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting hours of operation.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for

an additional or revised Construction Permit.

II. Source Description:

This source is classified as a natural gas processing plant defined under Standard Industrial Classification 1311. Raw natural gas is received in the Ft. Lupton plant and goes through one of two cryogenic processing trains. An engine compresses the inlet gas, an amine unit fired by a heater removes CO2 and H2S. The remaining residue compression is completed by six additional engines. Two fractionation trains separate out ethane, propane, butane and natural gasoline. Heat to the fractionation plant is provided by a hot oil heater. Refrigeration compression is provided by three engines. In addition, the plant has a flare, fugitive VOC emissions from miscellaneous equipment at the plant, and an incinerator is used for the combustion of oily solid waste.

The source is located in Ft. Lupton in an area designated attainment for all pollutants and is considered a synthetic minor stationary source with respect to Prevention of Significant Deterioration (PSD) requirements. Rocky Mountain National Park, a Federal Class I designated area is within 100 km of this facility. There are no affected states within 50 miles of this facility. Facility wide emissions are as follows:

<u>Pollutant</u>	Potential to Emit (tpy)	Actuals (tpy)
NO_x	154.06	38.93
VOC	85.76	26.77
CO	158.1	26.22
HAPs	13.97	0.77

The potential to emit is based on limits from permitted units. Actual emissions are based on the information submitted in the application. The source indicated in their application that they are subject to 112(r), the Accidental Release Requirements.

Several modifications were submitted with the operating permit application. None of these modifications triggered modeling or any additional applicable requirements.

III. Emission Sources

The following sources are specifically regulated under terms and conditions for the Operating Permit for this site.

<u>Unit S001</u>: Ajax DPC-540LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 514 HP, SN: 83891.

<u>Unit S002</u>: Ajax DPC-540LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 514 HP, SN: 83892.

<u>Unit S003</u>: Ajax DPC-540LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 514 HP, SN: 83889.

<u>Unit S004</u>: Ajax DPC-540LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 514 HP, SN: 83890.

1. Applicable Requirements - These engines were installed and began operation in September 1993. Final Approval construction permits 93WE157-(1-4) were issued on February 23, 1995 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity.

Emissions of air pollutants for **each** engine shall not exceed the following limitations:

Nitrogen Oxides	11.6 tons/yr	4.0 lbs/hr
Volatile Organic Compounds	5.8 tons/yr	1.3 lbs/hr
Carbon Monoxide	11.6 tons/yr	1.7 lbs/hr

The short term limits have been removed per the policy stated above.

Consumption of natural gas for **each** engine shall not exceed 4,860 scf per hour or 42.57 MMscf per year. (The short term limit has been removed per the policy stated above).

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

2. Emission Factors - Emissions from these reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NOX), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Approval of emission factors for these engines are necessary to the extent that accurate actual emissions are required to verify the need to submit Revised APENs to update the Division Emission Inventory. The emission factors requested by the source are based on stack tests for NOx and AP-42 (1/95) for CO and VOCs. The emission factors are compared to AP-42 Table 3.2-5 (10/96) for 2-cycle lean burn engines with Low NOx 'clean burn' design.

<u>Pollutant</u>	EF (lb/MMBtu)	AP-42 (lb/MMBtu)
NOx	0.514	0.83
CO	0.3	0.3
VOC	0.15	0.15

Source emission factors are less conservative than AP-42 for NOx. The emission factors at maximum design rate calculate to less then the current air pollution limitations for these engines. Rather than reduce the limits the source has

requested to keep the limits they already have.

- 3. Monitoring Plan The source will calculate emissions based on fuel consumption and the fuel based emission factors listed above on a monthly basis. Specific monitoring guidance for Internal Combustion engines located in attainment areas has been developed by the Division as shown on the attached grid titled, "Compliance/Scenario Summary Gas Fired IC Engines." The emission factors proposed are below AP-42 for NOx. Therefore, according to the monitoring grid, the source will be required to conduct the emission calculations and fuel use on a rolling twelve month basis. Portable Monitoring shall be conducted quarterly and the BTU Content of the natural gas used shall be determined using the ASTM analysis method D1945 or equivalent semi-annually.
- **4. Compliance Status -** A current APEN reporting criteria pollutants and HAPs is on file with the Division. This source is currently considered to be in compliance with all applicable requirements.

<u>Unit S007</u>: Fugitive VOC Emissions

1. Applicable Requirements - VOC emissions at this facility are above APEN deminimis and require a construction permit. Initial Approval (mod 1) Construction permit 93WE157-7 was issued on April 5, 1996 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity. (VOC sources are normally not an opacity concern and will not be specifically listed for this emission unit in the operating permit).

Emissions of air pollutants shall not exceed the following limitations:

Volatile Organic Compounds

10.9 tons/yr

2.5 lbs/hr

The short term limits have been removed per the policy stated above. The source requested an increase of the VOC limit to 19 tons per year due to an increase in components after the expansion of the plant in 1998.

This source is subject to New Source Performance Standards (NSPS) requirements of Regulation No. 6, Part A, Subpart KKK, Standards of Performance for equipment leaks of VOC from onshore natural gas processing plants and Regulation No. 6, Part A, Subpart A, General Provisions. The source has developed a Leak Protocol that will be attached as Appendix G to the operating permit.

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division

considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 93WE157-7 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

- **2. Emission Factors -** The source has calculated emissions from equipment leaks based on emission factors from EPA's Protocol for Equipment Leak Emission Estimates (EPA 453/R-95-017). Factors for the leakers and non-leakers are multiplied by the number of components of each type (e.g. Compressor Seals) and the VOC weight percentage in the organic portion of the gas stream as determined in the most recent analysis. EPA factors are given in terms of Total Organic Compounds.
- **3. Monitoring Plan -** As a means of recordkeeping, an initial physical hard-count of facility components will be conducted within 180 days of permit issuance to verify existing hardware inventory. Records shall be kept of all component additions and deletions, and a running tally maintained. A physical hard-count of facility components shall be conducted every five years following the initial count required under this condition. No component count has been specified in the Operating permit to allow flexibility under the VOC emission limitation.
- **4. Compliance Status -** A current APEN reporting criteria pollutants is on file with the Division. The source indicated they were out of compliance due to an increase in components. Upon issuance of this operating permit this source will be considered to be in compliance with all current applicable requirements.

Unit S008: Flare Industries 16" Model 250 Flare.

1. Applicable Requirements - This unit was installed and began operation in September 1993. Final Approval construction permit 93WE157-8 was issued on February 23, 1995 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity.

Emissions of air pollutants shall not exceed the following limitations:

Particulate Matter	0.01 tons/yr	0.83 lbs/hr
Nitrogen Oxides	1.38 tons/yr	115.83 lbs/hr
Volatile Organic Compounds	0.01 tons/yr	0.83 lbs/hr
Carbon Monoxide	0.10 tons/yr	8.30 lbs/hr

The short term limits have been removed per the policy stated above. The source requested an increase in emission limits due to an increase in gas consumption by the flare. The only pollutants that are above APEN deminimis are NOx at 2.68 tons per year and CO at 2.25 tons per year, the rest of the pollutants will not be included in the operating permit because they are below APEN deminimis and have a corresponding gas consumption limitation to monitor compliance.

Consumption of flaring gas shall not exceed 0.983 MMscf per hour or 5.0 MMscf per year. (The short term limit has been removed per the policy stated above). The source requested an increase in flaring process gas limit to 51 MMscf per year.

Hours of operation shall not exceed 24 hrs per year. (This source wishes to be able to run the flare unlimited hours therefore the limitation on hours will be removed).

Odor requirements of Regulation No. 2.

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

- **2. Emission Factors -** Emissions from a flare are from the combustion of the natural gas. The pollutants of concern are Nitrogen Oxides (NOX), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). The emission factors requested by the source are from AP-42 Table 1.4-1 (3/98) for small uncontrolled boilers.
- **3. Monitoring Plan -** The source shall calculate emissions using flare gas consumption and fuel based emission factors on a monthly basis. Visual observations which trigger EPA Method 9 readings shall be done to show compliance with the 20% opacity standard.
- **4. Compliance Status -** A current APEN reporting criteria pollutants is on file with the Division. The source indicated they were out of compliance due to an increase in emissions and flared gas consumption. Upon issuance of this operating permit this source will be considered to be in compliance with all current applicable requirements.

Unit S009: Amine Treating Unit, Rated at 2,500 bbl/d of Natural Gas Liquids.

- 1. Applicable Requirements This unit was installed and began operation in 1995. The heater was replaced in 1998 and is designated as S013. This unit is exempt from permitting because all criteria pollutants (H2S) are below APEN deminimis. However, H2S emissions are above reportable levels and shall be included in the operating permit as an emission unit. The only applicable requirements are 20% opacity and APEN reporting in accordance with Regulation No. 3, Part A.II.C.
- **2. Emission Factors -** The emission of concern for this unit is H2S and is based on the H2S content in the natural gas liquids being treated.
- **3. Monitoring Plan -** The source shall calculate H2S emissions on an annual basis.
- **4. Compliance Status -** A current APEN reporting non-criteria reportables is on file with the Division. This unit is currently considered to be in compliance with all

applicable requirements.

<u>Unit S010</u>: Elastec Smart Ash Model 100 Incinerator, SA18894, Design Rated at 48 lbs/hr and 0.4 MMBtu/hr.

1. Applicable Requirements - This unit was installed and began operating in 1995. Initial Approval construction permit 95WE683 was issued on September 18, 1996 with the following applicable requirements:

Operation of the equipment shall comply with Colorado Air Quality Control Regulation No. 6, Part B, Subpart VII, New Source Performance Standards (NSPS) for Incinerators as follows:

- a. Visible emissions shall not exceed 20% opacity.
- b. Particulate emissions shall not exceed 0.10 grains/scf corrected to 12% CO2.
- c. Summarized monthly records of daily burning rates and hours of operation and any particulate emission measurements shall be maintained and retained for at least two (2) years following the date of such records and summaries.

The charging rate shall not exceed 40 lbs per hour or 1.44 tons/year of dry mixture of waste such as paper, cardboard, oily absorbent material and oil contaminated filters. No other type of waste shall be burned in these units without prior approval from the Division. The short term limits have been removed per the policy stated above. The source requested an increase in charging to 210 tons per year.

A stack test was performed on July 7, 1994 on a Smart Ash Model 100 Incinerator. This stack test was approved by the Division to represent all Smart Ash Model 100 Incinerators installed in the State. The runs were performed at 48, 23, and 25 lbs/hr therefore the increase from 40 lbs/hr to 48 lbs/hr will not require an additional stack test for compliance with State NSPS E.

Absorbent materials that contain volatile liquids, such as gasoline or paint thinner shall not be burned in these units. All material to be incinerated must have a flash point higher than 100 °F.

The combustion chambers (55-gallon drums) shall not be overloaded with waste materials. It must have ample head room which encourages good start-up and efficient burning.

Liquid fuel shall not be used as start-up fuel. An ample layer of dry paper or cardboard material supplies a fast, easy initial fuel source for start-up.

Emissions of air pollutants shall not exceed the limitations below:

Particulate Matter	0.011 tons per year
PM10	0.004 tons per year
Sulfur Dioxide	0.002 tons per year
Nitrogen Oxides	0.001 tons per year
Volatile Organic Compounds	0.011 tons per year
Carbon Monoxide	0.014 tons per year

Because of the increase in charged material the source requested an increase in emission limits to the following:

Particulate Matter	1.58 tons per year
PM10	0.6 tons per year
Sulfur Dioxide	0.26 tons per year
Nitrogen Oxides	0.21 tons per year
Volatile Organic Compounds	1.58 tons per year
Carbon Monoxide	2.10 tons per year

The units shall be maintained and operated in accordance with manufacturer's operating instructions. The units shall only be operated by trained personnel who are competent and knowledgeable of the unit's operating instructions and maintenance procedures.

At all times including periods of start-up, shutdown, and malfunction, the facility and control equipment shall, to the extent practicable, be maintained and operated in a manner consistent with good air pollution control practices for minimizing emissions. Determination of whether of not acceptable operating and maintenance procedures are being used will be based on information available to the Division, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

This unit is subject to the odor requirements of Regulation No. 2.

There shall be no radioactive and hazardous waste materials of any type burned in this unit.

Revised APENs shall be filed in accordance with Regulation No. 3, Part A, II.C.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 95WE683 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emissions Factors - Although emissions are low for this unit, there are no

deminimis levels for either APEN or permitting requirements (Colorado Regulation No. 3, Part A.II.D.2 and Regulation No. 3, Part B.III.D.7) for incinerators. As a result annual emission calculations will be required. The pollutants of concern are Particulate Matter (PM and PM10), Nitrogen Oxides (NOX), Volatile Organic Compounds (VOC), Carbon Monoxide (CO) and Sulfur Dioxide (SO2) and are dependent on the material combusted. Approval of emission factors is necessary to the extent that accurate actual emissions are required to verify the need to submit revised APENs to update the Division's Emission Inventory and for payment of fees. The source requested emission factors below are from SCC 503001:

<u>Pollutant</u>	Emission Factor lb/ton
PM	15.0
PM10	5.7
SO2	2.5
NO2	2.0
VOC	15.0
CO	20.0

- **3. Monitoring Plan -** The source will calculate emissions for fee purposes based on the amount of waste burned. Emissions shall be calculated annually to ensure compliance with the annual limitations which requires keeping annual records of waste burned, maintain records of personnel trained to operate the incinerator and perform visual emission observations. A record of daily burning rates, hours of operation, any particulate measurements taken, type of waste, weight of charge and any notes regarding incinerator operation shall be summarized monthly. Conditions 5.1 through 5.8 identify how the source will be required to monitor compliance with the requirements.
- **4. Compliance Status -** A current APEN reporting HAPs is on file with the Division. The source indicated they were out of compliance due to an increase in charging rate. Upon issuance of this operating permit this unit will be considered to be in compliance with all current applicable requirements.

<u>Unit S012</u>: Ajax DPC-2803LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 550 HP, SN: 84286.

1. Applicable Requirements - This engine was installed and began operation on December 11, 1997. Initial Approval Construction Permit 97WE0722 was issued on February 26, 1998 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity.

Emissions of air pollutants shall not exceed the following limitations:

Nitrogen Oxides 16.8 tons/yr 3.83 lbs/hr Volatile Organic Compounds 6.7 tons/yr 1.53 lbs/hr Carbon Monoxide 20.1 tons/yr 4.59 lbs/hr

The short term limits have been removed per the policy stated above.

Consumption of natural gas shall not exceed 5,393 scf per hour or 47.24 MMscf per year. (The short term limit has been removed per the policy stated above).

A source compliance test shall be conducted to measure the emission rates of Oxides of Nitrogen and Carbon Monoxide using EPA approved methods. (Stack tests were performed in August and October of 1998).

Prior to stack test being performed, the applicant shall submit to the Division for approval a compliance plan and catalyst manufacturer, model number, serial number and specifications (engine is not catalyst controlled, therefore will not be incorporated into operating permit). The compliance plan was not submitted prior to testing however, it was included on the forms of the operating permit application.

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

Initial Approval construction permit 97WE0722 was permitted for a Superior 8G825 with Catalyst reduction (located at the Third Creek facility). The source actually installed an Ajax DPC-2803LE with out a catalyst instead. The operating permit will reflect the actual engine installed and the limits will remain the same as originally permitted.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 97WE0722 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors - Emissions from reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NOX), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Approval of emission factors for these engines are necessary to the extent that accurate actual emissions are required to verify the need to submit Revised APENs to update the Division Emission Inventory. The emission factors requested by the source are based on stack tests for NOx and AP-42 (1/95) for CO and VOCs. The emission factors are compared to AP-42

Table 3.2-5 (10/96) for 2-cycle lean burn engines with Low NOx 'clean burn' design.

<u>Pollutant</u>	EF (lb/MMBtu)	AP-42 (lb/MMBtu)
NOx	0.543	0.83
CO	0.3	0.3
VOC	0.15	0.15

Source emission factors are less conservative than AP-42 for NOx. The emission factors at maximum design rate calculate to less then the current air pollution limitations for these engines. Rather than reduce the limits the source has requested to keep the limits they already have.

- 3. Monitoring Plan -The source will calculate emissions based on fuel consumption and the fuel based emission factors listed above on a monthly basis. Specific monitoring guidance for Internal Combustion engines located in attainment areas has been developed by the Division as shown on the attached grid titled, "Compliance/Scenario Summary Gas Fired IC Engines." The emission factors proposed are below AP-42 for NOx. Therefore, according to the monitoring grid, the source will be required to conduct the emission calculations and fuel use on a rolling twelve month basis. Portable Monitoring shall be conducted quarterly and the BTU Content of the natural gas used shall be determined using the ASTM analysis method D1945 or equivalent semi-annually.
- **4. Compliance Status** A current APEN reporting criteria pollutants and HAPs is on file with the Division. The source indicated they were out of compliance with submitting a timely compliance plan, however the application included compliance forms (2000-500). Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Unit S013</u>: Born Natural Gas Fired Amine Unit Heater, Design Rated at 10.7 MMBtu/hr, Model and SN: 2885-0.

1. Applicable Requirements - This heater was installed and began operation on March 6, 1998. Initial Approval construction permit 97WE0723 was issued on March 20, 1998 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity.

Emissions of air pollutants for each engine shall not exceed the following limitations:

Nitrogen Oxides 9.3 tons/yr 2.13 lbs/hr Carbon Monoxide 2.3 tons/yr 0.53 lbs/hr

The short term limits have been removed per the policy stated above. Due to

changes in AP-42 Table 1.4-1 the NOx and CO emission limits have changed to 6.8 tons per year and 5.7 tons per year, respectively.

Consumption of natural gas for each engine shall not exceed 14,705 scf per hour or 128 MMscf per year. (The short term limit has been removed per the policy stated above).

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

- **2. Emission Factors -** Emissions from this unit are produced during the combustion process. The pollutants of concern are Nitrogen Oxides (NOX), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Approval of emission factors is necessary to the extent that accurate actual emissions are required to verify the need to submit Revised APENs to update the Division Emission Inventory. The emission factors requested by the source are based AP-42 Table 1.4-1 (3/98) for small uncontrolled boilers.
- **3. Monitoring Plan -** The source will calculate emissions based on fuel consumption and the fuel based emission factors on a monthly basis.
- **4. Compliance Status -** A current APEN reporting criteria pollutants and HAPs is on file with the Division. This source is currently considered to be in compliance with all applicable requirements.

<u>Unit S014</u>: Born, Inc Natural Gas Fired Hot Oil Heater, Design Rated at 32 MMBtu/hr, SN: 1963.

1. Applicable Requirements - This heater was installed and began operation on May 8, 1998. Initial Approval construction permit 97WE0724 was issued on February 6, 1998 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity.

Emissions of air pollutants shall not exceed the following limitations:

Nitrogen Oxides 9.3 tons/yr 2.13 lbs/hr Carbon Monoxide 2.3 tons/yr 0.53 lbs/hr

The short term limits have been removed per the policy stated above. The source requested an increase in natural gas consumption and therefore an increase in emissions as follows:

Nitrogen Oxides 14.2 tons/yr Carbon Monoxide 11.9 tons/yr

Consumption of natural gas shall not exceed 14,705 scf per hour or 128 MMscf per

year. (The short term limit has been removed per the policy stated above). The source requested an increase to 270 MMscf per year.

Heaters constructed after June 9, 1989, used to heat a transfer medium are subject to New Source Performance Standards requirements of Regulation No. 6, Part A, Subpart Dc, Standards of Performance for Small Industrial/Commercial/Institutional Steam Generating Units and Regulation No. 6, Part A, Subpart A, General Provisions.

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

- 2. Emission Factors Emissions from this unit are produced during the combustion process. The pollutants of concern are Nitrogen Oxides (NOX), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Approval of emission factors is necessary to the extent that accurate actual emissions are required to verify the need to submit Revised APENs to update the Division Emission Inventory. The emission factors requested by the source are based AP-42 Table 1.4-1 (3/98) for small uncontrolled boilers.
- **3. Monitoring Plan -** The source will calculate emissions based on fuel consumption and the fuel based emission factors on a monthly basis.

This unit is subject to the provisions of NSPS Subpart Dc. The Division's analysis of the applicable requirements for this (gas-fired) unit indicate that there are no emission limits imposed by the Subpart. Therefore, the daily fuel records required in 60.48c (h) and (l) do not have any regulatory impact. Subpart Dc will be listed as an applicable requirement in the permit, but there will not be any standards, monitoring, or recordkeeping associated with the requirement.

4. Compliance Status - A current APEN reporting criteria pollutants and HAPs is on file with the Division. This source is currently considered to be in compliance with all applicable requirements.

<u>Unit S015</u>: Ajax DPC-2803LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 550 HP, SN: 84308.

<u>Unit S016</u>: Ajax DPC-2803LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 550 HP, SN: 84288.

<u>Unit S017</u>: Ajax DPC-2803LE, 2-Cycle Lean Burn, Low NOx design, Natural Gas Fired Internal Combustion Engine, Site Rated at 550 HP, SN: 84287.

1. Applicable Requirements -These engines were installed and began operation in May 1998 (Units S015 and S016) and June 28, 1998 (Unit S017). Initial Approval Construction Permits 97WE0725 - 97WE0727 were issued on February 26, 1998

with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity.

Emissions of air pollutants for **each** engine shall not exceed the following limitations:

Nitrogen Oxides	10.6 tons/yr	2.43 lbs/hr
Volatile Organic Compounds	5.3 tons/yr	1.21 lbs/hr
Carbon Monoxide	10.6 tons/yr	1.43 lbs/hr

The short term limits have been removed per the policy stated above.

Consumption of natural gas for **each** engine shall not exceed 4,372 scf per hour or 38.3 MMscf per year. (The short term limit has been removed per the policy stated above).

A source compliance test shall be conducted on **each** engine to measure the emission rates of Oxides of Nitrogen and Carbon Monoxide using EPA approved methods. (Stack tests were performed in August and October of 1998).

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permits 97WE0725, 97WE0726 and 97WE0727 and the appropriate provisions of the construction permits have been directly incorporated into this operating permit.

2. Emission Factors - Emissions from these reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NOX), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Approval of emission factors for these engines are necessary to the extent that accurate actual emissions are required to verify the need to submit Revised APENs to update the Division Emission Inventory. The emission factors requested by the source are based on stack tests for NOx and AP-42 (1/95) for CO and VOCs. The emission factors are compared to AP-42 Table 3.2-5 (10/96) for 2-cycle lean burn engines with Low NOx 'clean burn' design.

<u>Pollutant</u>	EF (lb/MMBtu)	AP-42 (lb/MMBtu)
NOx	0.543	0.83
CO	0.3	0.3
VOC	0.15	0.15

Source emission factors are less conservative than AP-42 for NOx. The emission factors at maximum design rate calculate to less then the current air pollution limitations for these engines. Rather than reduce the limits the source has requested to keep the limits they already have.

- **3. Monitoring Plan -** The source will calculate emissions based on fuel consumption and the fuel based emission factors listed above on a monthly basis. Specific monitoring guidance for Internal Combustion engines located in attainment areas has been developed by the Division as shown on the attached grid titled, "Compliance/Scenario Summary Gas Fired IC Engines." The emission factors proposed are below AP-42 for NOx. Therefore, according to the monitoring grid, the source will be required to conduct the emission calculations and fuel use on a rolling twelve month basis. Portable Monitoring shall be conducted quarterly and the BTU Content of the natural gas used shall be determined using the ASTM analysis method D1945 or equivalent semi-annually.
- **4. Compliance Status -** A current APEN reporting criteria pollutants and HAPs is on file with the Division. The source indicated they were out of compliance for not submitting compliance demonstration within 180 days of commencement. The first semi-annual compliance report will serve as the compliance demonstration. Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Unit S018</u>: Caterpillar G3516TALE, 4-Cycle Lean Burn, Natural Gas Fired Internal Combustion Engine, Site Rated at 980 HP, SN: 3RCO1237.

<u>Unit S019</u>: Caterpillar G3516TALE, 4-Cycle Lean Burn, Natural Gas Fired Internal Combustion Engine, Site Rated at 980 HP, SN: 3RCO1240.

1. Applicable Requirements - These engines were installed and began operation on January 1, 1998. Initial Approval construction permits 97WE0728 and 97WE0729 were issued on February 26, 1998 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity.

Emissions of air pollutants for **each** engine shall not exceed the following limitations:

Nitrogen Oxides	18.9 tons/yr	4.32 lbs/hr
Volatile Organic Compounds	9.5 tons/yr	2.16 lbs/hr
Carbon Monoxide	18.9 tons/yr	4.32 lbs/hr

The short term limits have been removed per the policy stated above.

Consumption of natural gas for **each** engine shall not exceed 7,237 scf per hour or 63.4 MMscf per year. (The short term limit has been removed per the policy stated above).

A source compliance test shall be conducted on **each** engine to measure the emission rates of Oxides of Nitrogen and Carbon Monoxide using EPA approved methods. (Stack tests were performed in August and October of 1998).

Prior to stack test being performed, the applicant shall submit to the Division for approval a compliance plan and catalyst manufacturer, model number, serial number and specifications (engine is not catalyst controlled, a mistake was made on the construction permits). The compliance plan was not submitted prior to testing however, it was included on the forms of the operating permit application.

APEN reporting in accordance with Regulation No. 3, Part A.II.C.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permits 97WE0728 and 97WE0729 and the appropriate provisions of the construction permits have been directly incorporated into this operating permit.

2. Emission Factors - Emissions from these reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NOX), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Approval of emission factors for these engines are necessary to the extent that accurate actual emissions are required to verify the need to submit Revised APENs to update the Division Emission Inventory. The emission factors requested by the source are based on stack tests for NOx and CO and AP-42 (1/95) for VOCs. The emission factors are compared to AP-42 Table 3.2-1 (10/96) for 4-cycle lean burn engines.

Pollutant Pollutant	EF (lb/MMBtu)	AP-42 (lb/MMBtu)
NOx	0.585	3.2
CO	0.492	0.42
VOC	0.18	0.18

Source emission factors are less conservative than AP-42 for NOx. The emission factors at maximum design rate calculate to less then the current air pollution limitations for these engines. Rather than reduce the limits the source has requested to keep the limits they already have.

3. Monitoring Plan - The source will calculate emissions based on fuel consumption and the fuel based emission factors listed above on a monthly basis. Specific monitoring guidance for Internal Combustion engines located in attainment

areas has been developed by the Division as shown on the attached grid titled, "Compliance/Scenario Summary - Gas Fired IC Engines." The emission factors proposed are below AP-42 for NOx. Therefore, according to the monitoring grid, the source will be required to conduct the emission calculations and fuel use on a rolling twelve month basis. Portable Monitoring shall be conducted quarterly and the BTU Content of the natural gas used shall be determined using the ASTM analysis method D1945 or equivalent semi-annually.

4. Compliance Status - A current APEN reporting criteria pollutants and HAPs is on file with the Division. The source indicated they were out of compliance with submitting a timely compliance plan, however the application included compliance forms (2000-500). Therefore, this source is currently considered to be in compliance with all applicable requirements.

IV. Insignificant Activities:

Stabilization heater, 1.02 MMBtu/hr
Heater for Process Train 1, 1.09 MMBtu/hr
Heater for Process Train 2, 3.17 MMBtu/hr
Five crude oil or wastewater tanks, 8400 gallons each
One brine tank, 8400 gallons
One Methylethanolamine (MDEA) tank, 8400 gallons
One deionized water tank, 4200 gallons
Two pressurized butane tanks, 24,600 gallons each
Six pressurized raw mix tanks, 30,000 gallons each
Six pressurized propane tanks, 30,000 gallons each
One pressurized natural gasoline tank, 30,000 gallons
Three pressurized natural gasoline tanks, 42,000 gallons each
One pressurized natural gasoline tanks, 71,000 gallons

V. Alternate Operating Scenarios:

No alternate operating scenarios were identified in the operating permit application.

VI. Permit Shield

Regulation No. 3, Part B, Section III.A - Unit S009 is exempt from construction permitting requirements per exemption letter (95WE409.XP). Criteria emissions are below APEN deminimis, however H2S emissions are above the non-criteria reportable thresholds.

<u>Colorado Regulation No. 3, Part B, Section IV.D.3 (PSD)</u> - Based on the information provided, this facility is not a major stationary source (no criteria pollutant emissions potential to emit > 250 tons per year) with respect to Prevention of Significant Deterioration (PSD) requirements as of the issue date of this permit.

40 CFR 60 Subpart Dc §§ 60.42c; 60.43c, 60.44c; 60.45c; 60.46c; 60.47c; 60.48c(b), (c), (d), (e) and (f) (as adopted by reference in Regulation No. 6, Part A, Subpart Dc) - These sections are based on the use of either coal or fuel oil. This source utilizes only natural gas.

VII. Accidental Release Program - 112(r)

Section 112(r) of the Clean Air Act mandates a new federal focus on the prevention of chemical accidents. Sources subject to these provision must develop and implement risk management programs that include hazard assessment, a prevention program, and an emergency response program. They must prepare and implement a Risk Management Plan (RMP) as specified in the Rule.

Section 68.215(e) of the Federal Clean Air Act requires the Division to address four issues in regards to operating permit sources subject to 112(r):

1. Verify source submitted and register an RMP by deadline

EPA is in the process of setting up a Website specifically for 112(r) plans. All 112(r) sources will electronically submit their plans to this "designated central location". The Division will require sources certify in their annual compliance certification that they are/are not subject to 112(r) and they have/have not submitted a Risk Management Plan (RMP) to the designated central location by June 20, 1999. In addition, the Division will check the 112(r) website to verify that a RMP was actually submitted to the website by the deadline. Failure to submit a RMP by the June deadline by sources subject to 112(r) will be considered a permit deviation for reporting purposes under Title V.

2. Verify that source owner/operator has submitted a source certification or in its absence has submitted a compliance schedule.

As mentioned above, the Division will require that sources certify in their annual compliance certification that they are/are not subject to 112(r) and they have/have not submitted a Risk Management Plan (RMP) to the designated central location by June 20,1999. If they are subject to 112(r) but did not submit an RMP on time, a compliance schedule under the provisions of Title V must be submitted to the Division by the source. Failure to submit a RMP or a compliance schedule by the June deadline by sources subject to 112(r) will be considered a permit deviation for reporting purposes under Title V.

3. For some or all sources use one or more mechanisms such as completeness check, source audits, record review, or facility inspections to ensure permitted sources are in compliance with the requirements of this part

The Division may choose to perform any or all of the activities listed under this subsection. Although there is no specific number of such actions required in the

112(r) rule, a June 3, 1997 draft 112(r) implementation guidance from EPA states that "Congress considered a requirement that 1.4 percent of the RMPs be audited annually, but dropped that provision."

The Division will, at a minimum, perform a "completeness check" on an unspecified number of Title V 112(r) sources. The website that EPA is in the process of developing to accept 112(r) RMP's will include software that will electronically conduct a completeness check on the RMP's. For the purposes of this operating permit, such check shall serve as the completeness check required under 68.215(e)(3). As noted in the Preamble to the final 112(r) rule (June 20, 1996 Federal Register, page 31691), "EPA agrees that the review for quality or adequacy of the RMP is best accomplished by the implementing agency..." In Colorado, the implementing agency is the U.S. EPA. If the EPA website software indicates that a source did not submit a complete plan, it will be considered a permit deviation for reporting purposes under Title V and the Division may initiate an enforcement action for failure to meet the Title V permit condition (see below). Per the Preamble (page 31691), the Division may perform the completeness checks in a time frame consistent with the source's Title V certifications.

4. Initiate enforcement action as necessary

This refers to enforcement under Title V, not under Part 68 (112(r)). If a source fails to file a RMP or a compliance schedule by the June deadline or the EPA software indicates that the RMP is not complete, it will be considered a permit deviation for reporting purposes under Title V and the Division may initiate an enforcement action.